

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
BORDEN LADNER GERVAIS LLP
 World Exchange Plaza
 1100 - 100 Queen Street
 OTTAWA, Ontario
 Canada, K1P 1J9

PCT

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JUL 1 2005
 JUL 20 2005
 Borden Ladner Gervais LLP / s.r.l.

NOTIFICATION OF TRANSMITTAL OF
 THE INTERNATIONAL SEARCH REPORT AND
 THE WRITTEN OPINION OF THE INTERNATIONAL
 SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

00-211-3 ✓
 PAT2796W-0 - A5m18501A.5tapes.

Date of mailing
 (day/month/year)

14 July 2005 (14-07-2005)

Applicant's or agent's file reference

PAT2796W-90 - A5m18501/5H

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.

PCT/CA2005/000438 ✓

International filing date
 (day/month/year)

23 March 2005 (23-03-2005) ✓

Applicant

THE UNIVERSITY OF BRITISH COLUMBIA ET AL

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19 :

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46) :

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

*Dep't (44) 65
 envoi à PCT
 14/07/05*

2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that :

the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for the international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/CA
 Canadian Intellectual Property Office
 Place du Portage I, C114 - 1st Floor, Box PCT
 50 Victoria Street
 Gatineau, Quebec K1A 0C9
 Facsimile No.: 001(819)953-2476

Authorized officer

Lucille Leonard (819) 953-1737

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
BORDEN LADNER GERVAIS LLP
 World Exchange Plaza
 1100 - 100 Queen Street
 OTTAWA, Ontario
 Canada, K1P 1J9

PCT

NOTIFICATION OF TRANSMITTAL OF
 THE INTERNATIONAL SEARCH REPORT AND
 THE WRITTEN OPINION OF THE INTERNATIONAL
 SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

<p>Applicant's or agent's file reference PAT2796W-90</p> <p>International application No. PCT/CA2005/000438</p>	<p>Date of mailing <i>(day/month/year)</i> 14 July 2005 (14-07-2005)</p> <p>International filing date <i>(day/month/year)</i> 23 March 2005 (23-03-2005)</p>
---	--

Applicant
THE UNIVERSITY OF BRITISH COLUMBIA ET AL

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19 :

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46) :

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

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no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

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Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

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 Canadian Intellectual Property Office
 Place du Portage 1, C114 - 1st Floor, Box PCT
 50 Victoria Street
 Gatineau, Quebec K1A 0C9
 Facsimile No.: 001(819)953-2476

Authorized officer

Lucille Leonard (819) 953-1737

NOTES TO FROM PCT/ISA/220

These Notes are intended to give instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)) :

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter :

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the International application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

PATENT COOPERATION TREA

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

RECEIVED

JUL 19 2005

Borden Ladner Gervais LLP / s.r.l.

Applicant's or agent's file reference PAT2796W-90	FOR FURTHER ACTION	
	see Form PCT/ISA/220 as well as, where applicable, item 5 below	
International application No. PCT/CA2005/000438	International filing date (day/month/year) 23 March 2005 (23-03-2005)	(Earliest)Priority date (day/month/year) 23 March 2004 (23-03-2004)

Applicant
THE UNIVERSITY OF BRITISH COLUMBIA ET AL

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

the international application in the language in which it was filed

a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I

2. Certain claims were found unsearchable (see Box No. II)

3. Unity of invention is lacking (see Box No. III)

4. With regard to the title,

the text is approved as submitted by the applicant

the text has been established by this Authority to read as follows :

5. With regard to the abstract,

the text is approved as submitted by the applicant

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 10

as suggested by the applicant

as selected by this Authority, because the applicant failed to suggest a figure

as selected by this Authority, because this figure better characterizes the invention

b. none of the figures is to be published with the abstract

PATENT COOPERATION TREATY
PCT
INTERNATIONAL SEARCH REPORT
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PAT2796W-90	FOR FURTHER ACTION		see Form PCT/ISA/220 as well as, where applicable, item 5 below
International application No. PCT/CA2005/000438	International filing date (<i>day/month/year</i>) 23 March 2005 (23-03-2005)	(Earliest)Priority date (<i>day/month/year</i>) 23 March 2004 (23-03-2004)	
<p>Applicant THE UNIVERSITY OF BRITISH COLUMBIA ET AL</p>			

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

<p>1. Basis of the report</p> <p>a. With regard to the language, the international search was carried out on the basis of:</p> <p><input checked="" type="checkbox"/> the international application in the language in which it was filed</p> <p><input type="checkbox"/> a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))</p> <p>b. <input type="checkbox"/> With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I</p> <p>2. <input type="checkbox"/> Certain claims were found unsearchable (see Box No. II)</p> <p>3. <input type="checkbox"/> Unity of invention is lacking (see Box No. III)</p> <p>4. With regard to the title,</p> <p><input checked="" type="checkbox"/> the text is approved as submitted by the applicant</p> <p><input type="checkbox"/> the text has been established by this Authority to read as follows :</p> <p> </p> <p> </p> <p>5. With regard to the abstract,</p> <p><input checked="" type="checkbox"/> the text is approved as submitted by the applicant</p> <p><input type="checkbox"/> the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority</p> <p>6. With regard to the drawings,</p> <p>a. the figure of the drawings to be published with the abstract is Figure No. <u>10</u></p> <p><input checked="" type="checkbox"/> as suggested by the applicant</p> <p><input type="checkbox"/> as selected by this Authority, because the applicant failed to suggest a figure</p> <p><input type="checkbox"/> as selected by this Authority, because this figure better characterizes the invention</p> <p>b. <input type="checkbox"/> none of the figures is to be published with the abstract</p>	
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INTERNAL SEARCH REPORT

International application No.
PCT/CA2005/000438A. CLASSIFICATION OF SUBJECT MATTER
IPC(7): G01R 31/06, G01M 15/00, G06F 17/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(7): G01R 31/06 in combination with keywords

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
Delphion, USPTO WEST, Canadian Patent Database (keywords transformer, fault, monitor, test, online, short, circuit)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A ✓	US4857856 1989-08-15 G01R-31/06 Coleman et al.	1-35
A ✓	US6466034 2002-10-15 G01R-31/06 Wang et al	1-35
A ✓	US6549017 2003-04-15 G01R-31/06 Coffeen	1-35
A ✓	US6680616 2005-01-20 G01R-31/06 Khalin et al.	1-35

[] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

13 May 2005 (13-05-2005)

Date of mailing of the international search report

14 July 2005 (14-07-2005)

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001(819)953-2476

Authorized officer

David E. Green (819) 994-8213

INTERNATIONAL SEARCH REPORT
Information on patent family members

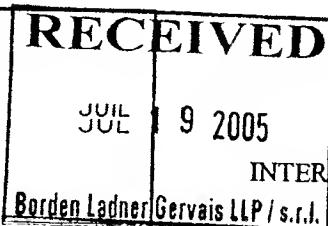
International application No.
PCT/CA2005/000438

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US4857856	15-08-1989	AT77490T T AU596498 B2 AU1146188 A DE3871979D D1 EP0279577 A1 GB8703543D D0 US4857856 A	15-07-1992 03-05-1990 18-08-1988 23-07-1992 24-08-1988 25-03-1987 15-08-1989
US6466034	15-10-2002	US6466034 B1	15-10-2002
US6549017	15-04-2003	AU5946701 A AU5951001 A US6369582 B2 US6549017 B2 WO0184168 A1 WO0184169 A1	12-11-2001 12-11-2001 09-04-2002 15-04-2003 08-11-2001 08-11-2001
US6680616	20-01-2004	CA2370754 A1 US6680616 B2	15-08-2002 20-01-2004

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
BORDEN LADNER GERVAIS LLP
World Exchange Plaza
1100 - 100 Queen Street
OTTAWA, Ontario
Canada, K1P 1J9



PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 14 July 2005 (14-07-2005)

Applicant's or agent's file reference
PAT2796W-90

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/CA2005/000438

International filing date (day/month/year)
23 March 2005 (23-03-2005)

Priority date (day/month/year)
23 March 2004 (23-03-2004)

International Patent Classification (IPC) or both national classification and IPC
IPC(7) G01R-31/06, G01M-15/00, G06F-17/10

Applicant

THE UNIVERSITY OF BRITISH COLUMBIA ET AL

1. This opinion contains indications relating to the following items :

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3 mo - Oct 14/05

22 mo Jan 23/06 - entered MAR 3

✓ checked NG

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001(819)953-2476

Date of completion of this opinion
13 May 2005 (13-05-2005)

Authorized officer

David E. Green (819) 994-8213

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WRITTEN OPINION OF THE
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Applicant's or agent's file reference
PAT2796W-90

FOR FURTHER ACTION
See paragraph 2 below

International application No. PCT/CA2005/000438	International filing date (day/month/year) 23 March 2005 (23-03-2005)	Priority date (day/month/year) 23 March 2004 (23-03-2004)
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International Patent Classification (IPC) or both national classification and IPC
IPC(7) G01R-31/06, G01M-15/00, G06F-17/10

Applicant
THE UNIVERSITY OF BRITISH COLUMBIA ET AL

1. This opinion contains indications relating to the following items :

<input checked="" type="checkbox"/> Box No. I	Basis of the opinion
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input checked="" type="checkbox"/> Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

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For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001(819)953-2476

Date of completion of this opinion

13 May 2005 (13-05-2005)

Authorized officer

David E. Green (819) 994-8213

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

a sequence listing
 table(s) related to the sequence listing

b. format of material

on paper
 in electronic form

c. time of filing/furnishing

contained in the international application as filed.
 filed together with the international application in electronic form
 furnished subsequently to this Authority for the purposes of search.

3. In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO
Inventive step (IS)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO
Industrial applicability (IA)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO

2. Citations and explanations :

The closest prior art is D1 US4857856 1989-08-15 G01R-31/06 Coleman et al. D1 discloses on site testing for slackening of transformer windings, by monitoring modulation of high-frequency signal injected into a conductor while a supply frequency signal is flowing in the conductor.

1. Novelty

None of the cited documents discloses a diagnostic device for generating a characteristic impedance for an electrical winding having an input terminal and an output terminal, which uses a processing means for calculating this impedance based on a transmission line model of the electrical winding, as recited in independent claim 1, or a corresponding method as recited in independent claims 18 and 29. As such, these claims and all their dependent claims are considered to be novel, in accordance with PCT Art.33(2).

2. Inventive Step

There is nothing in any of the cited art that would lead one skilled in the art to the features as recited in independent claims 1, 18 and 29, and as such, these claims, and all their dependent claims, are considered to involve an inventive step, in accordance with PCT. Art. 33(3).

3. Industrial Applicability

The subject matter of all claims 1-35 clearly has industrial applicability, in accordance with PCT. Art. 33(4).

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted :

In accordance with PCT Rules 5(a) and 5(b), the brief description of the drawings (currently on page 10) should be placed prior to the detailed descriptions of the figures, which seem to begin on page 2.

In accordance with PCT Rule 10.2, the reference signs must be consistent throughout the application. On pages 13-14 and in figures 5 and 6, there seems to be some conflict with the subscripts in the terms E_{kh} and E_{mh} , in that they are shown as E_{kk} and E_{mk} in the figures.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

Claims 11 and 12 are not in accordance with PCT Rule 6.2, in that they rely on explicit references to figures 6 and 8.

Claims 11 and 12 are not in accordance with PCT Art. 6. These claims should clearly define all of the terms used in the recited equations.

Claims 4, 21 and 24 are not in accordance with PCT Art. 6. The use of the phrase "at least about" is considered to be unclear, in that it implies that some undefined values outside of the specified range are intended to be covered, without specifying what those values are.